

Melbourne: a focal point for early botanical activity

J. H. Willis

102 Male St., Brighton, Victoria, Australia 3186

Abstract

Ferdinand von Mueller made Melbourne the chief centre of botanical activity in Australia during the 44 years that he laboured there. His botanical journeys, and collections therefrom, led to the establishment in 1853 of a colonial herbarium that evolved into the National Herbarium of Victoria. The preparation of *Flora australiensis* in seven volumes (Bentham 1863–1878), also Mueller's (1858–1882) classical 12-volume *Fragmenta phytographiae Australiae* are important earlier by-products of this institution. He was most interested in acclimatization and interchange of plant seeds, and he also investigated plant fossils. Mueller was involved with the Field Naturalists Club of Victoria, contributing numerous papers to its journal and encouraging its specialist, if amateur, members with their projects. His death, in 1896, left a vacuum in Victoria's floristic research that was only partly relieved by the arrival of A. J. Ewart from England in 1906.

Through the commendable foresight of Charles Joseph La Trobe, Superintendent of Port Phillip District, N.S.W., Melbourne's embryonic Botanic Garden was established in 1846, only 11 years after foundation of the settlement; he also reserved space for the Fitzroy and Carlton (Exhibition) Gardens. At this time virtually no botanical work had as yet emanated from the infant Melbourne, except perhaps for some 'extensive and excellent collections' (Hooker in Maiden 1908, p.102) around the settlement by one Frederick Adamson between 1840 and 1855 — specimens had been sent to Kew Herbarium.

By contrast, Sydney's Botanic Gardens (1816) had an advantage of 30 years and its collectors — notably Charles Fraser, Allan Cunningham, James Anderson, James Kidd and Charles Moore — had made substantial contributions from the environs of Port Jackson and far beyond, not to mention the achievements of such earlier visiting plantmen as Joseph Banks (plus his entourage), John White, Luis Néé, George Caley, Robert Brown, Leschenault de la Tour and Franz Sieber.

John Arthur and John Dallachy, both Scottish gardeners, were the two first superintendents of Melbourne Botanic Gardens; neither was a trained or active botanist, but they doubtless gave advice on such botanical matters as identifications. Daniel Bunce (1813–72) claimed the distinction of being Victoria's first resident botanist. He had come to this colony as a horticulturist from Tasmania in 1839, and later went on to establish Geelong's Botanic Garden in 1857.

Concurrently with a movement of population from South Australia towards the newly discovered goldfields in Victoria, young Dr Ferdinand J. H. Mueller arrived in Melbourne from Adelaide during August 1852. Well accredited in botanical circles, he was appointed within five months to the position of Victoria's first Government Botanist (on 28 January 1853), and he immediately commenced a series of stupendous exploratory journeys by horseback and on foot. By the end of 15 months he had covered 6,400 km

and netted 1,459 species of plants not previously recorded for Victoria, many of these being undescribed (Mueller 1853, 1854). Other explorations followed year by year, throughout and beyond the colony, bringing in a wealth of information that was soon to be disseminated by published accounts containing descriptions of a myriad of new species. A conservative estimate of his total travels by land would be 24,000 km, half of it in Victoria.

Probably Mueller's greatest achievement was in establishing the Melbourne Herbarium (MEL) which could be said to date from 1853 when he reported that 'a collection of dried specimens of plants has been commenced for the Government. This Herbarium will be at all times accessible to the public' (Mueller 1853, p.7). It was initially housed in his new cottage above Gate H of the Botanic Gardens, and by 1857 in the Director's residence (built 1854). During 1860–1861 the specimens were transferred to much more commodious quarters (the 'Old Herbarium') erected in The Domain; Mueller and his staff always referred to the repository as 'the Museum'. By 1869 the rapidly increasing number of specimens had risen to 350,000 (Mueller 1869). In the 1860s Mueller kept his own private herbarium separate from the larger government collection, but it is not known precisely when he donated the former material for amalgamation in a single national collection. His considerable and valuable library was purchased by the Government (for the Herbarium) in 1898 — two years after Mueller's death.

The National Herbarium of Victoria (MEL), moved to its present site and building in 1935, has grown to be the largest in Australia (probably also in the southern hemisphere) and by far the richest in historic collections and type material. The Australian specimens gathered on such expeditions as those of A. C. Gregory (1855–1856 & 1858), B. H. Babbage (1858), J. McD. Stuart (1860–1862), Burke & Wills (1860–1861), A. W. Howitt (1861–1862), J. & A. Forrest (1869–1871), W. E. P. Giles (1872–1875), W. H. Tietkens (1889)

and D. Lindsay (1891–1892) all came to Melbourne for examination by Mueller who worked through them, describing many novelties. Between 1876 and 1882 Lutheran missionaries F. A. H. Kempe and W. F. Schwarz supplied Mueller with hundreds of plant species from their Centralian station at Hermannsburg (Kempe 1880, 1882). Amongst Melbourne's special treasures are many duplicates from the early gatherings by Joseph Banks (1770) and Robert Brown (1802–1805), both donated by the British Museum (Natural History). Then there are a set of J. A. L. Preiss's Western Australian collections (1838–1841) and J. G. C. Lehmann's type-rich folders which were purchased as part of the great Otto Sonder herbarium (about 250,000 specimens) between 1870 and 1883 — they contain sheets from 18th century botanists, a few having even belonged to Linnaeus! These priceless resources remain as essential points of reference for most taxonomic research on the Australian flora.

The seven-volume *Flora australiensis* (Bentham 1863–1878) was a literary monument to the collaborative skills of two brilliant men working from opposite ends of the world, George Bentham at Kew and Ferdinand Mueller in Melbourne. Over a period of 16 years tens of thousands of Australian specimens were successively packaged by Mueller, shipped to London and returned when investigated by Bentham, without loss or damage — could one expect as much in these modern days of sophisticated handling and rapid transport? After more than a century, *Flora australiensis* still remains the only definitive work on the vascular vegetation of the whole continent.

A remarkable production of Mueller's was the *Fragmenta phytographiae Australiae* (twelve volumes in 94 fascicles between 1858 and 1882) wherein he described many of his 2,000 odd new species of plants (Mueller 1889). This work holds the unique distinction of being Australia's only scientific periodical to be printed entirely in Latin. Mueller's other writings are voluminous — some 1,330 items ranging from notes, plant lists, pamphlets and articles with original descriptions to floristic handbooks and immense monographs (Churchill *et al.* 1978). He wrote innumerable reports on the plant species accruing from various expeditions throughout Australia.

Mueller was Australia's first palaeobotanist, working and publishing (1871–1883, see Churchill *et al.* 1978) on the plant fossils turned up in Tertiary sediments by mining operations, especially along the deep leads under basalt. Excepting ferns, he sent to appropriate experts overseas all other cryptogams — bryophytes, algae, fungi and lichens. A stimulating early experience was to meet the renowned phycologist, Professor W. H. Harvey of Dublin University, who spent four months of spring and early summer 1854 in collecting seaweeds along the Victorian coastline (between Phillip Island and Port Fairy); Mueller rendered ample assistance and accompanied Harvey on several nearer excursions. After 18 months' collecting in various parts of Australia, Harvey returned to Ireland with 20,000 specimens — replicates of many are in MEL.

Another important involvement was Mueller's almost obsessive interest in acclimatization of plants suitable for timber, food, medicine, ornament, sand-binding and other uses. Many of our most acceptable

trees in forest plantations, parks and gardens bear witness to the success of his early introductions. In the year 1857/58 alone he had distributed 7,120 living plants and 22,438 packets of seed to gardens throughout the colony (Mueller 1858). Vast amounts of Australian seed (notably of *Eucalyptus*) were also sent abroad to various climatically favourable countries in both Old and New Worlds. A startling success, that earned him a papal knighthood, was to render habitable the fever-ridden Pontine marshes near Rome by plantations of *Eucalyptus globulus*, commencing in 1870.

For more than 40 years Ferdinand (later Baron von) Mueller held undisputed sway as Victoria's, if not Australia's, most productive, distinguished and highly decorated scientist. No other single person could match the output of this incredibly hard-working and dedicated explorer, geographer, horticulturist, phytochemist and systematist par excellence. In a very real sense the name of Mueller became synonymous with botanical endeavour throughout the colony and he certainly focussed attention on Melbourne as an important centre of culture and research. For the first three decades of Mueller's service, Victorian botany had been virtually a one-man show aided by a few rather faceless local amateurs. It is therefore interesting to speculate how and when botanical activity might have been generated here *without* the presence of a Mueller.

As the Baron aged, his fieldwork slackened off, and there were no exploratory marathons after 1877. Henceforward he concentrated on literary undertakings and much correspondence (to 3,000 letters per annum), while younger collectors provided him with needful specimens. Thus he enlisted, and inspired, a veritable army of willing enthusiasts from many walks of life — e.g. school teachers, doctors, clergymen, postal employees, surveyors, miners, farmers and their womenfolk.

A vital factor in promoting botanical activity in and around Melbourne was the Field Naturalists Club of Victoria, founded in 1880 with von Mueller as its patron and staunch supporter. The club's journal, *The Victorian Naturalist*, began on a monthly basis in 1884 and Mueller was a frequent contributor to its pages — 79 articles and notes to August 1896. As well as general observers and collectors of plants, the club had several members with specialist knowledge, viz.: Charles French (orchids and ferns), Daniel Sullivan (mosses), Rev. Francis Wilson (lichens), Henry Tisdall (fungi and algae), John Bracebridge Wilson (algae), Henry Watts (algae) and Prof. Arthur Lucas (algae) — all contributed papers to *The Victorian Naturalist* (Willis 1949).

Mueller's death in October 1896 left a vacuum in botanical effort that took many years to fill. As historian Lionel Gilbert reminds us, 'When he was ousted [in 1873] the Botanic garden by the Yarra became beautiful but intellectually void. Systematic botany in Victoria has been a long time recovering' (Gilbert 1986, p. [ix]).

Some renewal of collecting activity and an impetus to taxonomic work followed the arrival from England of Professor Alfred J. Ewart early in 1906. Ewart held the dual position of Government Botanist and head of the Botany School at Melbourne University, dividing

his time between the National Herbarium and the University. With a depleted staff, the severe exigencies of World War I and Ewart's departure in 1921 to full-time duties at the Botany School, Melbourne's Herbarium sank into a slough of unproductiveness, if not complete inertia, over a period of some three decades — until World War II. Only *The Victorian Naturalist* and research papers by Professor Ewart's students and associates, published in *Proceedings of the Royal Society of Victoria*, helped to keep systematic botany alive in this State until the 1940s. Significant highlights in this comparative limbo had been *A census of the Plants of Victoria* (1923, revised in 1928), prepared and published by the Plant Names Committee of the Field Naturalists Club of Victoria — a most useful pocket book retailing at three shillings & sixpence — and A. J. Ewart's long-awaited, rather bulky, single-volume *Flora of Victoria* (Ewart 1931).

Most other State Herbaria are controlled by appropriate departments; but, until quite recently, Melbourne's had been bedevilled by its location either within the Chief Secretary's Department or that of Crown Lands & Survey where due appreciation and understanding of botanical needs were often-times minimal or sometimes completely lacking.

References

Bentham, G. (1863–1878). *Flora australiensis*. 7 vols. (Lovell Reeve: London).

- Churchill, D. M., Muir, T. B. & Sinkora, D. M. (1978). The published works of Ferdinand J. H. Mueller (1825–1896). *Muelleria* 4: 1–120.
- Court, A. B. (1972). Preliminary notice on the Sonder collection in the National Herbarium of Victoria. *Muelleria* 2: 188.
- Ewart, A. J. (1931). *Flora of Victoria*. (Melbourne Uni. Press).
- Gilbert, L. A. (1986). *The Royal Botanic Gardens, Sydney*. (Oxford Uni. Press: Melbourne). p. [ix].
- Kempe, J. [F. A. H.] (1880). Plants indigenous to the neighbourhood of Hermannsburg, on the River Finke, central Australia. *Trans. & Proc. Roy. Soc. South Australia* 3: 129–137.
- Kempe, H. [F. A. H.] (1882). Plants indigenous to the neighbourhood of Hermannsburg, on the River Finke, central Australia. *Trans. & Proc. Roy. Soc. South Australia* 5: 19–23.
- Maiden, J. H. (1908). Records of Victorian botanists. *Victorian Naturalist* 25: 101–117.
- Mueller, F. J. H. (1853). First general report of the Government Botanist on the vegetation of the colony. *Victoria-Parl. papers-votes and proceedings of the Legislative Council* 1853. 1 (A. No. 26a & b): 1–22.
- Mueller, F. J. H. (1854). Second general report of the Government Botanist on the vegetation of the colony. *Victoria-Parl. papers-votes and proceedings of the Legislative Council* 1854–5. 1 (A. No. 18): 1–20.
- Mueller, F. J. H. (1858). Annual report of the Government Botanist and Director of the Botanic Gardens. *Victoria-Parl. papers-votes and proceedings of the Legislative Assembly* 1858–59. 2 (No. 17): 1–27.
- Mueller, F. J. H. (1858–1882). *Fragmenta phytographiae Australiae*. 12 vols & suppl. (Melbourne).
- Mueller, F. J. H. (1869). Report of the Government Botanist and Director of the Botanic Garden. *Victoria-Parl. papers-votes and proceedings of the Legislative Assembly* 1869. 3 (No. 21): 1–21.
- Willis, J. H. (1949). Botanical pioneers in Victoria-II. *Victorian Naturalist* 66: 103–109.